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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/583,450
Filing Date: June 19, 2006
Appellant(s): DECLERCK, JOHAN WILLY

Bacon & Thomas, PLLC
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 13 March 2009 appealing from the Office action mailed 03 September 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. However, it is noted that the first anticipation rejection (that of claims 1-6, 13, and 14 over JP 63-224944A) has been changed to a rejection over JP 63-224944A as evidenced by Alger (Polymer Science Dictionary, 2nd Edition, page 433, 04-1999). The Alger reference is added as evidence as to what is well-known in the art to address a new argument made by the appellant for the first time in the appeal brief (i.e. that the ethylene-ethyl acrylate-maleic anhydride copolymer is not a polyolefin). According to MPEP 1207.03(III), where a newly cited reference is added merely as evidence of a prior art statement made by the examiner as to what is "well-known" in the art - which was challenged for the first time in the appeal brief

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- the citation of the reference in the examiner's answer does not ordinarily constitute a new ground of rejection within the meaning of 37 CFR 41.39(a)(2).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

JP 63-224944	SUSUMU	09-1988
US 6,306,503	TSAI	10-2001
EP 1,287,909	ANNEGRET	03-2003

Alger, M. "Polymer Science Dictionary" 2nd Edition, page 433, 04-1999.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 13, and 14 stand rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-224944 A as evidenced by Alger (Polymer Science Dictionary, 2nd Edition, page 433, 04-1999).

The Alger reference is added to the rejection for the purpose of addressing newly presented arguments put forth by the appellant. This does not constitute a new grounds of rejection within the meaning of 37 CFR 41.39(a)(2) because the newly added reference is used merely to illustrate that the broadest reasonable definition of the term "polyolefin" encompasses the polymer of the ethylene-ethyl acrylate-maleic anhydride layer.

An English language translation of JP 63-224944 A has been provided by the applicant.

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JP 63-224944 A teaches a multilayer film formed by co-extrusion comprising an ethylene-ethyl acrylate-maleic anhydride layer bonded to a polychlorotrifluoroethylene layer by ethylene-glycidyl methacrylate-vinyl acetate polymer (abstract). The ethylene-glycidyl methacrylate-vinyl acetate polymer corresponds to the jointing layer of the instant claims. In the embodiment of the example, the polychlorotrifluoroethylene layer has a thickness of 150 μm . The ethylene-ethyl acrylate-maleic anhydride layer corresponds to the polyolefin layer of the instant claims.

The definition of "polyolefin" presented by Alger (see page 433) indicates that copolymer such as ethylene-vinyl acetate are frequently considered to be polyolefins. Thus, one of ordinary skill in the art would consider a copolymer of ethylene, ethyl acrylate, maleic anhydride to be a polyolefin.

Claims 1-4 stand rejected under 35 U.S.C. 102(b) as being anticipated by Tsai (US 6,306,503).

Tsai teaches a multilayer film comprising a fluoropolymer layer attached to a thermoplastic layer by means of an intermediate adhesive layer (column 2, lines 20-26). Preferably, the fluoropolymer is a homopolymer or copolymer of chlorotrifluoroethylene (column 2, lines 34-37). Preferably, the thermoplastic layer comprises a polyolefin (column 2, lines 52-53). The fluoropolymer layer may have a thickness of up to 10 mils, i.e. $\sim 250 \mu\text{m}$ (column 4, lines 9-10). The multilayer film may be formed in any conventional manner including coextrusion and lamination (column 3, lines 58-64).

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Claims 7-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai (US 6,306,503) in view of Annegret (EP 1,287,909).

Tsai teaches all the limitations of claims 7-12, as outlined above, except for the specific details of the extrusion/lamination process. However, Tsai does teach that the multilayer film may be prepared in any convention manner (column 3, lines 58-64).

Annegret is directed to a method for forming coatings and laminations (paragraph 0001). Figures 2-10 illustrate various embodiments for adhering first and second substrates with a hot melt adhesive wherein the adhesive is extruded and the laminate is compressed between first and second rollers (paragraph 0030). The adhesive may be extruded on a first layer to form a two layer on one of the rollers before passing through the nip between the rollers (e.g. Figures 2 and 3). Alternatively, the adhesive may be extruded between the rollers guiding the first and second layers through to the nip (Figure 4). The rollers may be heated (paragraph 0033) and at least one roller typically comprises rubber (paragraph 0031). The method of Annegret avoids streaking and striation problems and allows the lamination to be carried out inline or offline (paragraphs 0006-0007).

One skilled in the art would have been motivated to use the method of Annegret to form the multilayer film of Tsai so as to yield a product that does not suffer from streaking and striation problems and to take advantage of the ability to operate inline and/or offline as needed, particularly since Tsai explicitly teaches the multilayer film may be prepared in any conventional manner.

With respect to claim 8, it would be within the ability of one skilled in the art to extruded the adhesive onto either of the layers, including the polyolefin layer, since the adhesive adheres

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to both layers (otherwise it would not keep the laminate together) and both layers are compressed together through the same nip. Thus, one skilled in the art would be expected to have an equal expectation of success regardless onto which layer the adhesive was extruded.

With respect to claims 10-12, since either roller may be designated as "the first roller" or "the second roller," the fact that at least one roller is heated and at least one roller typically comprises rubber is sufficient to satisfy the limitations of these claims.

(10) Response to Argument

Rejection of claims 1-6, 13, and 14 over JP 63-224944 A as evidenced by Alger

The appellant argues that the ethylene-ethyl acrylate-maleic anhydride copolymer of JP 63-224944 is not consistent with the meaning of the term polyolefin as would be understood by one skilled in the art. The appellant notes that the specification describes polyolefins as polymers which are mainly built up of carbon and hydrogen atoms. The appellant refers to a dictionary definition (without providing the dictionary) of polyolefin as a polymer of an alkene, such as polyethylene.

In response the examiner notes that the meanings of "polyolefin" provided by the appellant do not exclude an ethylene-ethyl acrylate-maleic anhydride copolymer as described in JP 63-224944. The monomers ethylene (i.e. $\text{CH}_2=\text{CH}_2$), ethyl acrylate (i.e. $\text{CH}_2=\text{CH}-\text{COOC}_2\text{H}_5$), and maleic anhydride ($\text{CH}=\text{CHCOOCO}$) are mainly composed of carbon and hydrogen atoms (100% of ethylene, 87% of ethyl acrylate, and 67% of maleic anhydride are carbon or hydrogen atoms). Thus, an addition polymer of ethylene, ethyl acrylate, and maleic anhydride would be expected to have a carbon-hydrogen content directly proportional to the

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carbon-hydrogen content of the monomers used to form the polymer. Since all the monomers of an ethylene-ethyl acrylate-maleic anhydride copolymer are mainly composed of carbon and hydrogen atoms, the resulting polymer would be expected to also be mainly composed of carbon and hydrogen atoms.

Moreover, the dictionary definition provided by the appellant (i.e. that a polyolefin is a polymer of an alkene, such as polyethylene) also encompasses the ethylene-ethyl acrylate-maleic anhydride copolymer as described in JP 63-224944. Since ethylene is an alkene, a copolymer of ethylene, ethyl acrylate, and maleic anhydride is *a* polymer of an alkene.

Finally, the examiner provides a definition from Alger's Polymer Science Dictionary indicating that copolymers in which the olefin monomer predominates, such as ethylene vinyl acetate copolymer, are also frequently considered to be polyolefins.

The appellant further argues that the preamble language of "for packaging liquid products" is a claim limitation which cannot be ignored and has not been met by the reference. The appellant argues that the phrase is not simply a recitation of intended use but breathes life into the claimed subject matter.

In response, the examiner notes that, while the appellant alleges that the phrase "for packaging liquid products" breathes life into the claims, the language not only appears to be merely intended use, but also is met by the film described in JP 63-224944. The phrase "for packaging liquid products" appears to be an intended use of the film that does not breathe life into the claims for the following reasons: (a) the preamble is not essential to understanding limitations or terms in the body of the claim, (b) the body of the claim does not depend on the

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preamble phrase for antecedent basis, (c) the preamble does not recite additional structure or steps underscored as important by the specification, (d) the preamble does not recite essential structures or steps necessary to give life meaning and vitality to the claims, and (e) the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness. Furthermore, as a film exhibiting high moisture resistance, the film taught by JP 63-224944 would be expected to be able to function as packaging for liquid products. The appellant has provided no rationale or reasoning as to why the film taught by JP 63-224944 would not be able to function as packaging for a liquid product.

The appellant argues that the process described in JP 63-224944 for forming the film is a co-extrusion process, in contrast with the claimed film which is extrusion laminated.

In response, the examiner notes that claims 1-6, 13, and 14 are drawn to a product and not a process. Since the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. Since the product of JP 63-224944 meets the structural limitations of claims 1-6, 13, and 14 (i.e. a film comprising a PCTFE layer having a thickness of at least 10 μm , a jointing layer, and a polyolefin layer) and since the appellant has not presented evidence from which it could be reasonably concluded that the claimed product differs in kind from that of JP 63-224944, the claims stand unpatentable even though the prior product may be made by a different process.

Finally, the appellant argues that claims 5, 6, 13, and 14 are directed to a jointing layer formed of a copolymer of a polyolefin and glycidyl methacrylate, in particular a copolymer of

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ethylene and glycidyl methacrylate. The appellant argues that the ethylene-ethyl acrylate-maleic anhydride layer does not anticipate the jointing layer of these claims.

In response the examiner notes that the ethylene-ethyl acrylate-maleic anhydride layer was never alleged to read on the jointing layer of claims 5, 6, 13, and 14. Rather the rejection of record states that the ethylene-glycidyl methacrylate-vinyl acetate polymer (which is a copolymer of both ethylene and glycidyl methacrylate) corresponds to the jointing layer.

Rejection of claims 1-4 over Tsai et al.

The appellant argues that the claimed film is manufactured by extrusion lamination, which is not a conventional technique for multilayered film which offers the advantage that any thickness for a PCTFE layer may be used.

In response the examiner notes that, since claims 1-4 are directed to a product, the determination of patentability is based on the product itself and not on its method of production. It is noted that Tsai et al. teaches film having a thickness of up to 10 mils, which meets the thickness requirement of claims 1-4.

The appellant also argues that the jointing layer of the claimed film does not necessarily comprise a styrene-containing rubber as required by Tsai et al.

In response the examiner notes that the jointing layer of claims 1-4 is not limited to any particular material and does not exclude any particular material. As such, the presence of styrene-rubber in the intermediate adhesive layer of Tsai et al. does not preclude this adhesive layer from reading on the jointing layer of claims 1-4.

The appellant further argues that the preamble language of "for packaging liquid products" is a claim limitation which cannot be ignored and has not been met by the film of Tsai et al., which is designed for packaging pills.

In response, the examiner believes that the language is merely intended use that is nevertheless met by the film for Tsai et al. As noted above, the phrase "for packaging liquid products" appears to be an intended use of the film that does not breathe life into the claims for the following reasons: (a) the preamble is not essential to understanding limitations or terms in the body of the claim, (b) the body of the claim does not depend on the preamble phrase for antecedent basis, (c) the preamble does not recite additional structure or steps underscored as important by the specification, (d) the preamble does not recite essential structures or steps necessary to give life meaning and vitality to the claims, and (e) the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness. Furthermore, as a film having an exterior layer composed of a fluoropolymer suitable as a barrier packaging material and known to be inert to most chemicals (see column 1, lines 16-25), the film taught by Tsai et al. would be expected to be able to function as packaging for most chemicals including liquid chemicals. The appellant has provided no rationale or reasoning as to why the film taught by Tsai et al. would not be able to function as packaging for a liquid product.

Rejection of claims 7-12 over Tsai et al. in view of Anneget

The appellant argues that, while Tsai et al. teach preparing their film in a conventional manner, the preferred method is by coextrusion as shown in Example 1 which is not described by

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Tsai et al. The appellants argue that, while one skilled in the art would be motivated to use the method of Annegret to form the multilayer film of Tsai to yield a product that does not suffer from streaking and striation problems and to take advantage of the ability to operate inline and/or offline as needed, there is no suggestion in Tsai et al. that there is a streaking problem. Thus, it is argued that the motivation is not based on the reference but is hindsight.

In response it is noted that the motivation for combining the references is taken directly from Annegret and is not based on hindsight derived from the appellant's specification. Regardless of the presence or absence of streaking or striations, one skilled in the art would still be motivated to use to method of Annegret to take advantage of the ability to operate inline and/or offline as needed. Moreover, that Tsai et al. is silent as to the presence or absence of streaking or striations is not necessarily an indication that such blemishes do not and/or cannot arise as applicants and patentees rarely choose to highly negative aspects of the inventions.

The appellant also argues that one skilled in the art would appreciate that the coating technique of Annegret relates to the formation of very thin coatings (as noted in paragraph 0044), which teaches away from the extrusion lamination of the presently claimed invention.

In response, it is noted that the "very thin coatings" described in paragraph 0044 of Annegret appears to refers to the adhesive coatings (see paragraph 0043 describing hot melt coating weights as most preferably less than 10 g/m^2) and not the film materials to be laminated together (see paragraphs 0040 and 0041 describing film materials having a thickness of about 5-50 μm).

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With respect to claim 8, the appellant argues that the examiner's analysis does not take into consideration factors, such as the various viscosities and melting points of the film, that would not lead one skilled in the art to have an equal expectation of success regardless onto which layer the adhesive was extruded.

In response, the examiner notes that this allegation appears to be the appellant's opinion. On the other hand, Annegret illustrates applying the adhesive to either film in the laminate prior to passing through the rollers (e.g. Figure 2 shows the adhesive applied to roller A while Figure 5A shows the adhesive applied to roller B) as well as applying the adhesive to both films just as they enter the nip between the rollers (e.g. see Figure 4). Thus, based on the teachings of Annegret, one skilled in the art would have an equal expectation of success in performing the extrusion lamination technique of Annegret regardless of to which substrate the adhesive is first applied.

The appellant further argues that one skilled in the art who wishes to obtain better adhesion between layers of multilayer film would not directly be stimulated to apply extrusion lamination. Rather, it is argued that one skilled in the art would look to different compositions of the adhesive layer. The appellant further argues that Annegret does not teach that altering the manufacturing parameters would lead to better adhesion between the layers.

In response it is noted that, regardless of whether Annegret teach that their method results in better adhesion, there are other factors that would motivate one skilled in the art to use the process of Annegret to form the film of Tsai - i.e. to yield a product that does not suffer from streaking and striation problems as well as to take advantage of the ability to operate inline

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and/or offline as needed. It is also noted that it has been held that it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant (see MPEP 2144).

Finally, the appellant argues that, should one skilled in the art consider altering the manufacturing parameters, such a process would entail much trial and error with an almost infinite number of variables and not a finite number as sanctioned by KSR. The material properties of the jointing layer are carefully selected in function of the purpose for which the film is designed, the desired thickness of the film and/or individual layers, the material of the polyolefin layer with which the adhesive layer is jointed, and the temperature of the rollers.

In response, it is noted that the only one of these properties that is claimed as a structural limitation is the thickness of the PCTFE layer and the technique of Annegret is designed to operate with films typically having a thickness up to about 50 μm (i.e. within the claimed range). It is also noted that the Annegret reference was published prior to the filing of the instant application - an indication that extrusion lamination is an established and conventional technique for forming multilayer film with which one skilled in the art would be familiar. As such, it would be expected that one skilled in the art would possess the necessary know-how to apply routine experimentation to arrive at optimal or suitable operating parameters, since the experimentation needed to determining appropriate operating parameters of a disclosed prior art process would be no more than the application of the expected skill of a polymer engineer/scientist. This is further supported by a review of the appellant's specification which outlines the claimed process without specifying suitable ranges for particular variables, such as

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the temperature of the rollers. If (as the appellant is apparently alleging) arriving at optimal or suitable operating parameters would require more than routine experimentation, the appellant's own disclosure would not be enabled. That the appellant's own disclosure does not provide suitable ranges for variables such as roller temperature is a further indication that discovering such a variable requires no more than routine experimentation.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Ramsey Zacharia/

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